

# News Briefs

## NASA selects ISO 9001 registrar

NASA has selected a third-party registrar, Det Norske Veritas Certification, Inc., located in Houston to provide detailed compliance audits of NASA's Ames Research Center, Dryden Flight Research Center, Goddard Space Flight Center, Jet Propulsion Laboratory, Kennedy Space Center, Langley Research Center, Lewis Research Center, Stennis Space Center and NASA Headquarters. This selection is a key milestone in moving towards NASA Administrator Daniel S. Goldin's challenge to have the Agency ISO 9001-certified by September 1999. NASA is the first federal agency to commit to ISO 9001 certification. Once certified, NASA will demonstrate its commitment to excellence in aeronautics and spaceflight technology, as well as in internationally accepted quality management practices.

## NASA, FAA announce aviation design winners

Winners of the 1997 National General Aviation Design Competition were named by NASA and the Federal Aviation Administration. The first place award was presented to a student team from the University of Kansas, Wichita State University, and Kansas State University. The team's design offers a four-passenger, kit plane "for the pilot with limited resources." The design claims payload, range, cruise velocity, take-off and landing field lengths, rate of climb, and handling qualities comparable to a Cessna 172R for about half the cost, or \$75,000. The team calls its aircraft "Adagio" in honor of its potential for graceful flight reminiscent of the adagio musical movement of a symphony. The design uses a Zoch AeroDiesel Engine Z0 02A and features an unusual, inverted "V" tail. The team believes that its design can be built in about 200 hours, a fraction of the time required for current kit planes.

## New aircraft makes debut at airshow

NASA Administrator Daniel S. Goldin joined Williams International Chairman Sam Williams at Oshkosh, Wis., in the debut of the V-JET II, an all-composite, turbofan-powered light aircraft designed for future flight testing of modern turbofan engines. Provided by Williams for use in the agency's General Aviation Propulsion program, the aircraft will demonstrate breakthrough, low-cost turbine-engine propulsion systems for light, general aviation aircraft with cruising airspeeds greater than 200 knots.

# Sleep-shift maneuvers keep ground team busy

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by the Flight Director and the team, and is then uplinked. The flight controllers verify that the correct command was loaded on the shuttle's computers, and everyone sits back and watches the shuttle maneuver.

"It encompasses probably a fourth of the front-room team resources to put this together," Austin said.

STS-85 Lead FAO Alan Bartos said accomplishing these maneuvers allows the ground team to take an active part in acquiring the science. "Years ago we used to be against this idea, but we've proven on other flights as well as this one again that the ground is capable of maneuvering and can get good sci-

ence for some of these instruments that have pointing requirements," said Bartos, another USA employee.

Roger Galpin, lead Payloads Officer, said the flight is so "packed" with payloads that all the observations barely fit into the timeline.

"We have solar instruments, we have celestial instruments, we have Earth-viewing instruments. Then in addition to that, we have requirements to point the payload bay antennas directly at CRISTA-SPAS during periods of its free flight to guarantee communications."

Galpin said that TAS-1 instruments directly affected include the Solar Constant Experiment from Belgium, which is looking at the

solar disk and measuring the solar constant; the Space Laser Altimeter and the Infrared Spectral Imaging Radiometer, which look at the Earth; the Shuttle Laser Altimeter, which shines a laser into the Earth's atmosphere and looks at the ultraviolet return signal.

On IEH, he said, the Ultraviolet Spectrograph Telescope for Astronomical Research needs to look over the starboard wing at Jupiter, stars and Comet Hale-Bopp; the Distribution and Automation Technology Advancement—Colorado Hitchhiker and Student Experiment of Solar Radiation, the Solar Extreme Ultraviolet Hitchhiker-2 and the Shuttle Glow Experiments

also have pointing needs.

"We've got so many payload instrument pointing requirements from the different payload customers," Austin said, "that to accommodate everything and to fit it in a 24-hour cycle, it extends our activities over into the crew sleep period."

The pace becomes more intense as the mission goes on until the last day of the flight, when the ground-commanded maneuvers reach a crescendo.

"The night before entry, we're doing a tweak to the attitude about every 45 minutes during a 5 hour period and those are time critical," Austin said.

# Plan links JSC work to agency goals, objectives

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has an easily read format with illustrations that address JSC activities in relation to the four major HEDS goals and each objective. While all goals and objectives are important, the second HEDS goal, "Advance Human Exploration of the Solar System," provides a good example of the tight linkage of goals to objectives to JSC implementation. The HEDS Objective "Establish a human presence on the Moon, in the Martian system, and elsewhere in the inner solar system," is being implemented at JSC by developing—with involvement around the agency—the architectures, technology road maps, critical and breakthrough technologies, vehicles, and space operations and communications infrastructure to support human mission to the Moon, Mars, and asteroids. Similar relationships are clearly identified for objectives such as "Expand human presence in space by assembling and operating the International Space Station."

Within the plan, the Exploration Strategic Roadmap, developed at JSC and approved by the HEDS Management Council and NASA Administrator Daniel S. Goldin, features the integrated initiatives of International Space Station, Human Research and Support Technology, Space Operations, Shuttle upgrades, In-Situ Resource Utilization, and Revolutionary Interplanetary Transportation and Power, leading ultimately to lunar and Mars missions.

Every individual and organization should be able to relate their functions to the center's plan and then ultimately to the agency's top level goals. The plan provides guidance for decision-making throughout JSC's organizations.



JSC Photo 97-09591

**HARDWARE INSPECTION—Astronauts Bob Cabana, commander of STS-88, the first International Space Station assembly mission, and Nancy Currie, mission specialist, inspect the first of two station mating adapters at the McDonnell Douglas factory in Huntington Beach, Calif. The pressurized mating adapter, called PMA-1, and its companion will be attached to a station connecting module called Node 1 and launched aboard Endeavour in July 1998. PMA-1 was shipped from California to Kennedy Space Center in late July to join the node and begin launch preparations.**

# Discovery set to land Monday after jam-packed flight

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of the mechanical arm on the Japanese Experiment Module as part of the space station. The MFD mechanical arm was put through a series of tests on four different flight days. Davis and Robinson, along with ground controllers, tested the MFD arm's capabilities using a small orbital replacement unit and a small door that are located on the MFD platform in the cargo bay.

Also giving a preview of future ISS operations is the Microgravity vibration isolation mount payload flying as an ISS Risk Mitigation Experiment and two Detailed Test Objectives—the Orbiter Space

Vision System and the AutoTRAC Computer Vision System

The MIM payload is a platform that can be magnetically levitated to isolate sensitive microgravity experiments from vibrations created by shuttle operations. The MIM hardware will be used to determine what level of microgravity quality is obtainable using the MIM system. This knowledge will be used to design experiments for the International Space Station requiring a motion-isolation systems. The MIM payload has already flown on the Mir space station. STS-85 is MIM's first shuttle flight.

The OSVS system, developed in

Canada, and the ACVS system, developed at JSC, use existing shuttle payload bay cameras and other payload bay hardware to provide precise relative position, attitude, and rate cues in a concise graphical and digital format. The orbiter crew uses these cues to perform remote manipulator system operations and/or proximity operations.

Two other payloads being carried in *Discovery's* cargo bay are the Technology Applications and Science-01 and the International Extreme Ultraviolet Hitchhiker-02 payloads. TAS holds seven separate experiments providing data on the Earth's topography and atmo-

sphere, studying the Sun's energy and testing new thermal control devices. The four experiments comprising the IEH payload are studying ultraviolet radiation from the stars, the Sun and other sources in the solar system.

Payload and experiments flying in the crew cabin area include the Southwest Ultraviolet Imaging System, a 7-inch imaging telescope that was pointed out of the orbiter's side hatch window to observe the Hale-Bopp comet.

The STS-85 crew is scheduled to conclude its mission Monday, Aug. 18, with a landing at Kennedy Space Center just after 6 a.m. CDT.

# Wolf undergoes Russian space walk training

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walks planned over the next several months.

Lawrence does not fit in the Orlan suit which Russian cosmonauts use for space walk tasks and never underwent space walk training. Wolf fits in the Orlan suit. Lawrence will continue training in the backup role according to normal procedures, in the unlikely event that she is needed.

To enable Wolf to complete space walk training at the Gagarin Cosmonaut Training Center outside Moscow, the launch of *Atlantis* on the next shuttle-Mir docking mission, STS-86 in September, could be delayed approximately 10 days. Wolf had been scheduled for launch in January on STS-89 as the prime crew member for the final

long duration increment on Mir.

NASA will be conducting its normal safety reviews in preparation for the transfer of a U.S. astronaut to Mir as was done before the last shuttle docking mission. This review will include an evaluation of all the events that have occurred aboard Mir since the last docking mission. That final determination is expected at the conclusion of the formal U.S. review process at the shuttle program Flight Readiness Review in September.

NASA and Russian space officials have discussed a variety of options for backup space walk capability since the Spektr module was damaged in the collision of a Progress resupply craft on June 25. It was jointly agreed by both sides that it would be mutually ben-

eficial to have all three crew members on the Mir qualified for space walks in the event additional assistance is needed from the U.S. astronaut on the station.

"The Russians usually only fly two people trained for space walks," said Frank Culbertson, manager of the Shuttle-Mir Phase 1 Program. "Because of the number and the nature of space walks under consideration by the Russians to repair the Spektr, we have discussed at length the advantage of having another astronaut qualified for those tasks."

"The fact that Wendy does not fit in an Orlan suit is not unusual. When first selected to fly on the Mir, it was absolutely normal that she would not be considered to be a space walk qualified crew mem-

ber. Only because of subsequent events have requirements on board the Mir changed. As a result, the joint decision was made to have all three crew members on board qualified to handle space walking tasks," Culbertson said.

Lawrence was informed of the decision by Culbertson, who was in Russia for meetings with Russian space officials.

Because of her knowledge and experience with Mir systems and crew transfer logistics for the Mir, and her Russian language proficiency, NASA will fly Lawrence on STS-86. The mission will launch aboard the Space Shuttle *Atlantis* in September and will deliver Wolf to the Russian station. Wolf is fully trained on both Mir and Soyuz capsule systems.



The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for all space center employees. Deadline for the submission of articles is Friday, three weeks before the desired date of publication.

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